

Amendments to the Claims

A complete list of pending claims follows, with indicated amendments:

1. (Currently amended) A method for managing rebuild commands directed from a drive controller to a drive, the drive having a first non-volatile memory and a cache, the drive controller having a second non-volatile memory;

enabling the cache of the drive;

recording in the second non-volatile memory of the drive controller each rebuild command directed to the drive; and

periodically causing the drive to flush its cache to cause data cached in the cache of the drive and associated with the rebuild commands to be transmitted to the first non-volatile memory of the drive, comprising the steps of:

maintaining a count in the drive controller of the number of commands stored in the second non-volatile memory of the drive controller, and

causing the drive to flush its cache when the count of the number of commands stored in the second non-volatile memory of the drive controller reaches a predetermined threshold, wherein the predetermined threshold is less than the maximum number of commands that may be recorded in the second non-volatile memory of the drive controller;

wherein each rebuild command directed to drive is at least temporarily recorded in the second non-volatile memory during the period that the cache of the drive is enabled.

2. (Original) The method for managing the rebuild commands directed to a drive of claim 1, further comprising the step of disabling the cache of the drive following the successful rebuild of the drive.

3. (Cancelled)

4. (Previously amended) The method for managing the rebuild commands directed to a drive of claim 1, further comprising the step of clearing the second non-volatile memory and the count following the successful flushing of the cache to the first non-volatile memory.

5. (Currently amended) A storage array, comprising:

multiple drives, wherein each drive comprises,

non-volatile storage media for storing data; and

a write cache for caching data associated with write commands received

by the drive; and

drive controllers, wherein each drive controller is associated with and coupled to a drive of the storage array, wherein each drive controller comprises a first memory, wherein the first memory is operable to store a history of write commands transmitted from each drive controller to its associated drive; and

wherein each drive controller is operable to manage the rebuild of its associated drive by:

enabling the write cache for the drive;

recording each write command sent to the drive in the first memory;

periodically causing the drive to flush data in the write cache of the drive;

disabling the write cache for the drive upon the successful completion of the rebuild of the drive;

wherein each drive controller comprises a second memory for recording the number of commands stored in the first memory, and

wherein each drive controller is operable to cause its associated drive to flush data in the write cache when the number of commands stored in the first memory reaches a predetermined threshold, wherein the predetermined threshold is less than the maximum number of write commands that may be recorded in the first memory.

6. (Previously amended) The storage array of claim 5, wherein each drive controller is operable to clear its first memory following the indication of the successful flushing of data in the write cache of the associated drive.

7. (Cancelled)

8. (Cancelled)

9. (Original) The storage array of claim 5, wherein the first memory is non-volatile.

10. (Currently amended) A method for rebuilding storage media of a drive, wherein the drive is in communication with a drive controller and a write cache that may be selectively enabled, the method comprising:

enabling the write cache for the drive;

transmitting one or more commands to the drive from the drive controller;

writing the one or more commands to a journal located in the drive controller;

providing a count of commands sent to the drive, wherein the count is located in the drive controller;

forcing the drive to flush data in the write cache to the storage media; and

wherein the step of forcing the drive to flush data in the write cache is performed once the count of commands sent to the drive reaches a predetermined value, wherein the predetermined value is less than the maximum number of commands that may be written to the journal.

11. (Original) The method for rebuilding the storage media of a drive of claim 10, further comprising the step of clearing the journal.

12. (Previously amended) The method for rebuilding the storage media of a drive of claim 11, further comprising the step of disabling the write cache for the drive following the successful rebuild of the storage media of the drive.

13. (Cancelled)

14. (Previously amended) The method of claim 10, further comprising the step of clearing the journal following the successful flushing of data in the write cache.

15. (Cancelled)

16. (Previously amended) The method of claim 10, further comprising the step of clearing the journal after the drive flushes all data in the write cache and transmits a message indicating that the cached data was written to the storage media.

17. (Original) The method of claim 10, where the journal is comprised of non-volatile memory associated with a drive controller.

18. (Currently amended) A drive controller operable to communicate with a drive through a communications channel, comprising:

a first memory for recording commands transmitted from the drive controller to the drive during a period that the drive is being rebuilt;

a second memory for storing a count of the commands recorded in the first memory;

wherein, during the period that the drive is being rebuilt, the drive controller is operable to enable a write cache of the drive and cause the drive to flush data in the write cache of the drive when the count of the commands reaches a predetermined threshold, wherein the predetermined threshold is less than the maximum number of commands that may be recorded in the first memory.

19. (Original) The drive controller of claim 18, wherein the drive controller is operable to disable the write cache of the drive following the successful rebuild of the drive.

20. (Original) The drive controller of claim 19, wherein the first memory comprises non-volatile memory.